

## **ABSTRACT**

A method for synchronizing and identifying the cell code (scrambling code) of a cell in an orthogonal frequency division multiplexing (OFDM) based cellular communication system is provided. In this method, desired cell is found by utilizing a frame structure of 5 OFDM symbols and through a corresponding cell search procedure, where the frame structure has periodic signal pattern and contains the information about the cell code of the desired cell in common pilot channel (CPICH) signal. And, the cell search method utilizes the periodic property of the frame structure to detect frame timing, and the correlation property of CPICH signal to identify the cell code. The cell search method of 10 the present invention offers the advantages of good link quality, fast acquisition, and low power consumption.